

Remarks

Claims 1-14 are pending in the application, with claim 1 being the independent claim. Based on the foregoing Amendment and the following Remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Objections to the Specification

The Examiner, on page 2 of the Action, objects to the specification due to the lack of section headings. Accordingly, the specification has been amended to comply with U.S. patent practice, thereby rendering the objection moot.

Objections to the Drawings

The Examiner, on page 3 of the Action, objects to the drawings because of features described on page 10 of the specification and recited in claims 4, 5, and 7 not corresponding with the drawings. Accordingly, the specification and claims 4, 5, and 7 have been editorially amended to more particularly describe the drawings. It is not believed that any new matter has been entered.

Figure 1 was amended during the international phase of the PCT application. Figure 1, as originally submitted in the present application, did not reflect this amendment. Therefore, amended Figure 1 is submitted herewith and should replace the Figure 1 originally submitted in the present application.

Figure 3 has been amended to show arrow IV, indicating the viewing direction of new Figure 4. Figure 3 is also amended to more particularly indicate exemplary coolant supply and

coolant discharge locations as disclosed in specification. (See Specification, page 2 lines 48-49 and page 11, line 354-page 12, line 368, for example). A copy of amended Figure 3 is submitted herewith.

New Figure 4, submitted herewith, is a view of the electric machine 2, according to an exemplary embodiment of the present invention, as seen in the direction of its axes. It is not believed that Figure 4 contains any new matter. Figure 4 shows exemplary coolant supply and coolant discharge locations as disclosed in specification. (See Specification, page 2 lines 48-49 and page 11, line 354-page 12, line 368, for example). Figure 4 also shows an exemplary circulation pump 48, heat exchanger 50, and external cooling circuit 52, all of which were disclosed in claims 12 and 13 as originally filed.

Objections to the Claims

On page 4 of the Action, the Examiner objects to claim 1, asserting a typographical error regarding the reference number of the sealing layer. Claim 1 has been amended to overcome the objection.

Also on page 4 of the Action, the Examiner objects to claims 3, 9, 11, and 14, asserting insufficient antecedent basis for various terms recited in the claims. Claims 3, 9, 11, and 14 have been amended to more clearly define the subject matter of the claimed invention, thereby rendering the objections moot.

Rejections Under 35 U.S.C. § 112

The Examiner, on page 5 of the Action, rejects claims 2, 3, and 4 under the first paragraph of 35 U.S.C. § 112, asserting that the subject matter was not described in the specification because of the term “enclosure” was not described in the specification. Claims 2

and 3 have been canceled. Claim 4 recites that the stator part is provided with an enclosure in its entirety. The specification described the enclosure as a component. (See Specification, page 11, lines 346-352). The specification has been amended to more particularly define the “component” as an “enclosure,” thereby rendering the rejection moot.

Also on page 5 of the Action, the Examiner rejects claims 5, 7, 8, and 12 under the second paragraph of 35 U.S.C. § 112 as being indefinite for failing to particularly point out the subject matter of the invention. Accordingly, claims 5, 7, 8, and 12 have been amended to more clearly define the invention and to otherwise conform to U.S. patent practice. The amendments to claims 5, 7, 8, and 12 render the Examiner’s rejections moot.

Claim Rejections Under 35 U.S.C. § 103

On page 6 of the Action, the Examiner rejects claims 1-9 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,227,108 to Washizu et al. in view of U.S. Patent No. 5,008,572 to Marshall and U.S. Patent No. 6,376,957 to Haydock et al. and U.S. Patent No. 4,227,108 Washizu and U.S. Patent No. 5,578,879 to Heidelberg et al. Applicants respectfully traverse the rejection and request reconsideration and withdrawal of the rejection for the following reasons.

As recited in claim 1, the present invention is a reluctance electric machine. This means that while the machine has discrete rotor poles 20, there are no permanent magnets and no windings to form electro-magnets. (See Specification, page 1, lines 5-31 and page 10, lines 303-326). A machine according to the present invention, as recited in claim 1, comprises a **liquid** cooling medium and a sealing layer comprising a first layer for fulfilling the sealing function and a second layer for taking up the forces on the sealing layer.

It is submitted that it would not have been obvious for a person having ordinary skill in

the art to apply a sealing layer in a reluctance electric machine. In fact, a person having ordinary skill in the art would refrain from applying such a seal since additional material in the air gap may cause a deterioration of the magnetic conditions. (See Specification, page 2, line 61-page 3, line 75). This is particularly true if, as with the present invention, the reluctance electric machine is cooled by liquid cooling medium, since such electric machines have a high energy density.

In conventional machines, the intention has been to avoid any layer in the air-gap in order to keep the radial distance between the stator pole faces and the rotor pole faces as small as possible. In contrast, the reluctance electric machine of the present invention comprises a composite layer 28 which overlies both the pole faces 16 and the grooves 14 between the stator poles. It is a new concept to have such a composite layer comprising two layers and to have such a composite bandage in a liquid-cooled inductance electric machine. The disadvantages of such a design are deliberately tolerated by the present invention in order to realize the considerably more efficient cooling provided therewith. (See Specification, page 3, lines 70-75).

None of the applied references, alone or in combination, teach or suggest an electric machine having a sealing layer of the type recited in claim 1 around the pole faces of a stator part. Washizu shows sealing members 114 that do **not** overlie the pole faces. To be sure, Washizu discloses a shield layer 109 that overlies the pole faces, but shield layer 109 does not have a sealing function as required by claim 1 of the present application. Moreover, shield layer 109 consists of "an aggregate-containing glass compound" (See Washizu, Figures 7 and 8 and Column 5, lines 17-18), which is fundamentally different from the composite sealing layer of the present invention which overlies both the pole faces and the grooves between the stator poles.

Thus, Washizu does not teach or suggest a sealing layer as in the present invention. Nor does Washizu give motivation for combining the teachings of the other applied references to allegedly reach the present invention. Therefore, the Examiner has not shown a reasonable

combination of the applied references to reach the invention claimed in the present application.

For at least the reasons discussed above, no reasonable combination of the applied references teaches or suggests a reluctance electric machine as claimed in the present invention. Therefore, a prima facie case of obviousness has not been set forth. The Examiner has not only failed to provide proper motivation to combine the references, but the claimed invention would not result even if the references were combined.

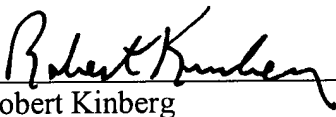
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Claims 2 and 3 have been canceled. Claims 1, 4-12, and 14 have been amended to overcome the Examiner's rejections as set forth in the Office Action and to otherwise more clearly define the subject matter claimed therein. Accordingly, Applicant submits that claims 1 and 4-14 of the present invention are in condition for allowance. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Non-Final Office Action and, as such, the present application is in condition for allowance with claims 1 and 4-14. Therefore, Applicant respectfully requests that the Examiner pass the case to issue. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

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